



Weekly Summary Report

USEPA Oversight, Sauget Area 2, Sauget, IL

WA No. 224-RXBF-05XX / Contract No. 68-W6-0025

Week Ending Friday November 28, 2003

This report summarizes the Remedial Action (RA) work conducted by Solutia and its contractors from November 22, 2003 through November 28, 2003. The current RA fieldwork consists of barrier wall trenching, backfilling, and site preparation.

Contractors Onsite

Inquip Associates Inc. (barrier wall construction contractor)
Lowry Electric (electrical contractor to Solutia)
Pangea Group (construction support services, primary subcontractor to Inquip)
PSI (Professional Service Industries) (geotechnical testing services, subcontractor to Inquip)
RockHill Mechanical (pipefitter contractor to Solutia)
URS (primary consultant for Solutia)
Zahner Survey (surveying contractor to Inquip)

Work Performed This Week

Groundwater Migration Control System (GMCS)

The Groundwater Migration Control pumping system was reprogrammed during the week by URS, under direction of Solutia, to equalize the gradient between the river level and the piezometers. Note that during the previous week, the river level was generally between 3 and 5 feet higher than the water levels measured in the four piezometers located upgradient of the barrier wall alignment. The pumping rate fluctuated broadly from November 24 through 26 after the control program was modified. By November 27, the pumping rate had stabilized to the programmed minimum for each extraction well of 75 gallons per minute (gpm), or 225 gpm cumulatively. On November 28, the river level remained at 385 feet above mean sea level and the four piezometers read water elevations between 384.0 and 384.7 feet.

In general, the combined flow rate of the GMCS pumping system decreased through the week from approximately 1,414 gpm on November 21 to 225 gpm on November 28. The river level remained relatively constant throughout the week between 385 and 387 feet above mean sea level. The system continued to operate fully automatically based on the river stage, piezometers, and the modified control system program.

Solutia stated that the GMCS control program had to be modified in order to increase or decrease the pumping rate of each extraction well (individually) by 10 percent when the river stage and water levels in the two closest piezometers differed by greater than ½ foot. During the week, the system was checking the water level and making the adjustment approximately once an hour.

Night Work

Starting on November 24, 2003, Inquip started to work 24 hours per day, 12-hour per shift, at the site. Light plants were installed to illuminate the site for night work. During the night shift, only one hydraulic clamshell rig was operating to excavate trench.

Site Preparation

Pangea continued work to maintain road surfaces across the site. Additionally, repairing and reinforcing of silt fences and clearing materials deposited adjacent to the fences (after the large rain event during the previous week), was conducted as needed throughout the week.

Zahner Survey was onsite during the week to locate construction areas as required by Inquip. A new length of the elevation hubs, spaced every 10 feet, were placed adjacent to the trench extending from approximately station 18+50 to 14+00.

Stormwater Management

The rain event on November 17 and 18 (approximately 5-inch) caused significant pooling of stormwater across the site. On November 22, the valve between the two modutanks was opened; this allowed an additional 250,000 gallons of stormwater to be collected in the temporary tanks. The two modutanks, full with stormwater, were drained to the inlet of the GMCS permanent pipeline on November 25, 2003. Approximately 400,000 gallons of stormwater were discharged, together with the pumped groundwater from the extraction wells, to American Bottoms for treatment. After the tanks were drained, the valve between the two tanks was closed. Stormwater continued to be pumped to the modutanks throughout the week. Stormwater was not used during the week, as had previously been planned, to blend into slurry for thinning. why?

RockHill Mechanical were onsite the morning of November 25 to pipefit the inlet to the GMCS permanent pipeline to allow the stormwater to be discharged directly to American Bottoms treatment facility.

Pangea started work on November 26 to dry out the spoils containment area on top of the landfill. The temporary berm across the access road that had contained stormwater within the area was knocked down.

Box Culvert

Solutia and Inquip plan to start activities to plug and remove a section of the box culvert for the barrier wall starting the week of December 1, 2003. These activities are pending final legal approval from the Village of Sauget.

Ranney Well Lateral Pipe

The mechanical clamshell rig, a Liebherr 855 crane, continued work during the week to excavate panels (separated from the current barrier wall trench) looking for one of the lateral pipes extending from the Ranney Well. The test panels by the mechanical clam were being conducted to check if the current equipment onsite is capable of cutting through the steel lateral pipe.

The clamshell started to excavate a third panel that linked the previous two panels at the

anticipated location of the Ranney well lateral during the week. No physical evidence of the steel lateral pipes from the Ranney well was encountered.

Slurry Mixing

Approximately 110 tons of bentonite gel was used to mix slurry this week. The slurry, when pumped from the south holding pond to the trench, was tested frequently to assess its viscosity and adjusted with a blending pump using water from the fire hydrant, as necessary. The viscosity of the slurry was measured using a Marsh funnel, with results obtained during the week generally satisfactory.

Spoils Handling

By the end of the week, access to the spoils containment area on top of the landfill was restored. Materials that will not be used in the backfill mixture could then be transported to and stockpiled in the southeast cell of the containment area.

Spoils were transferred from south to north within the exclusion zone to provide materials for backfill mixing. Spoils were scooped up using a trackhoe, placed into a specially modified dump truck and transported to the backfill mixing pad.

Barrier Wall Construction

Inquip has opened the trench to approximately 1370 feet in length along the barrier wall alignment, from station 27+50 towards station 13+80 (please refer to Solutia's map for locations). In general, a small backhoe was used to excavate the first 10 feet and then the KH1266 trackhoe continued trenching up to 75 feet in depth while the clamshell rigs were used subsequently to complete the excavation down to bedrock. The Liebherr 853 rig experienced some damage to the hydraulic clam on November 26 requiring repairs that will continue in the next week.

Bentonite slurry was pumped into the trench as needed to keep the excavation open. Viscosity was measured on the slurry pumped to the trench approximately every 15 minutes and the water blend fraction was adjusted as necessary. Top and bottom trench slurry samples, together with fresh slurry samples were tested at least twice per day by PSI. The parameters tested on the slurry samples consisted of viscosity, unit weight, filtrate loss, pH, and sand content. The test results were generally satisfactory.

Trench depths continued to be measured once daily (AM) during the week and every 100 linear feet of trench with 20-foot spacing of measurements on either side of the backfill toe. The trench depth measurements from the morning of November 28 are shown in Table 1, depicting the weekly progress. Construction progress by November 21, 2003 is shown below. Graph 1 shows the progress of the trench in comparison to the previous week. Graph 2 shows the overall progress of the barrier wall construction.

During the week, Inquip mixed and placed into the trench approximately 520 cubic yards of backfill material. Backfill was placed on two of four workdays during the week. The backfill consisted of spoils with the addition of approximately 15 percent clean clay soil. This was the first week that clay soil, instead of dry bentonite, was used as the additive for the backfill mixture. Backfill was "back-tracked" into the trench using a bulldozer.

The backfill was tested by PSI on site for slump, unit weight and moisture content. The unit weight of backfill placed during the week measured approximately between 122 and 126 pounds per cubic foot (pcf). Slump test results were generally between 3.5 to 4 inches. All

test results met the minimum requirements. Tests on the backfill mixture to be conducted offsite included permeability and gradation. Meuser Rutledge's laboratory is conducting the permeability tests, while PSI's testing facility is performing the gradation tests.

Prior to the backfill operation, the bottom of trench was cleaned thoroughly using one of the clamshell rigs. Depth-to-bottom measurements were made every 10 linear feet of trench to ensure the bottom of the trench was at a consistent depth and on top of bedrock. These depth measurements were performed with the clamshell rig's instrumentation and confirmed in two locations manually with the downrigger (plumbob on wire). Additionally, two samples with a clam sampler were collected by URS and PSI from the top of the placed backfill in the trench prior to adding more backfill. These backfill samples were visually checked to ensure that the trench bottom was clean and free of any sand.

Other Activities

Pangea continued work during the week to construct the Freeze Protection System for the Stormwater Treatment System. The freeze protection system includes: (1) installing a recirculation loop for water through the filtration skid and carbon treatment columns, (2) installing a tent with heat lamps over the filtration skid, (3) installing heat tracing, and (4) placing concrete blankets over pipes for insulation. During the week, Pangea continued to wrap concrete blankets over the pipes that were heat traced and started to wrap the carbon treatment columns with concrete blankets.

Table 1 – Depths-to-bottom Measurements for the Barrier Wall Trench (Morning of November 28, 2003)

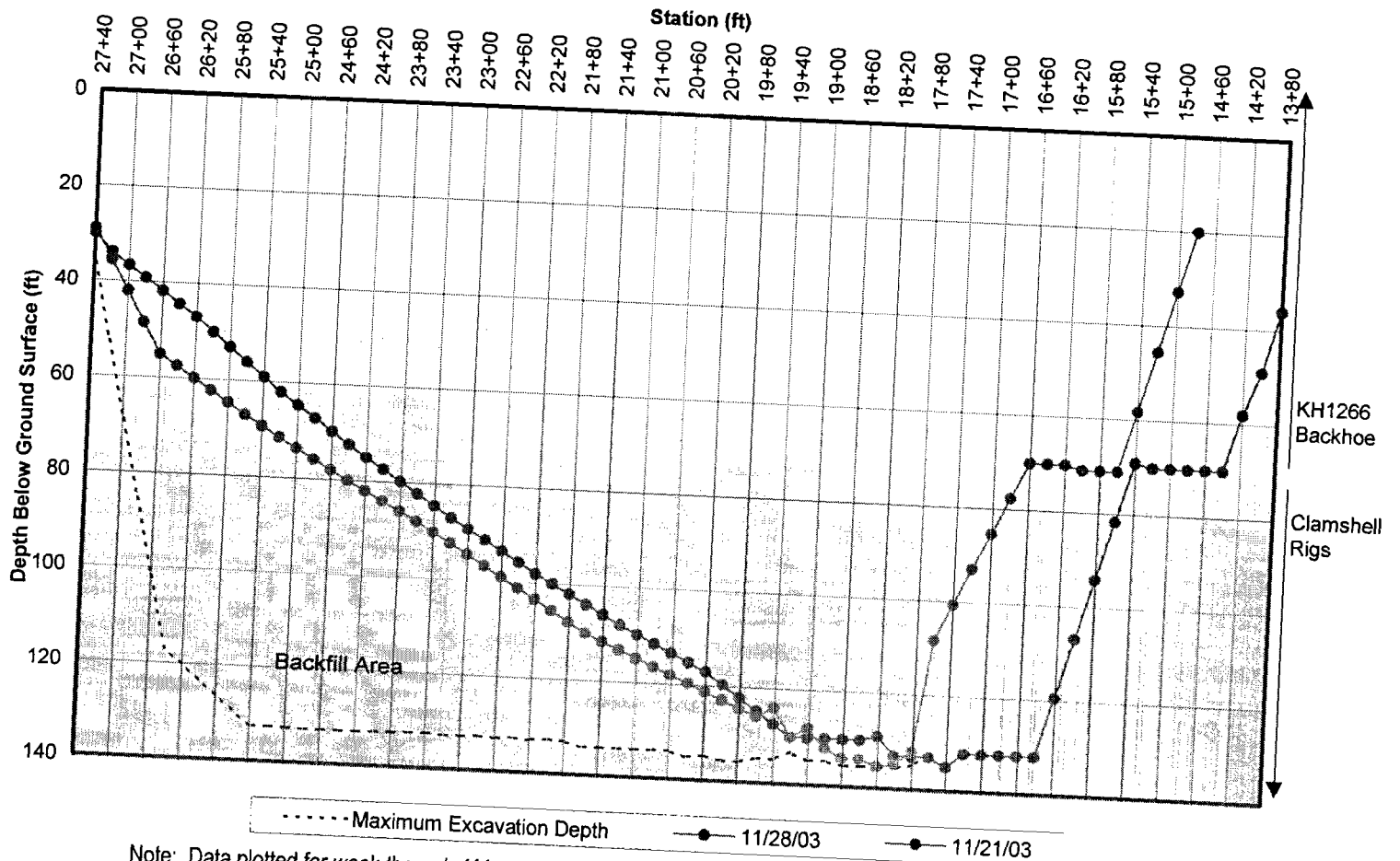
Station ID	Depth to bottom (ft below ground surface)
13+80	36
14+20	58
15+20	70
17+20	132
17+40	135
17+60	133
17+80	133
18+00	133
18+20	129
18+40	130
18+60	130
18+80	130
19+00	130
19+20	130
20+20	117
21+20	108
22+20	98
23+20	87
24+20	75
25+20	62
26+20	47
27+20	34
27+40	30

Note: Distances between stations where trench depth measurements were read varies in Table 1. Measurements are separated by 100 linear feet of trench in most areas, however, the area that delineates the toe of the backfill is measured every 20 feet.

Construction Progress

Graph 1

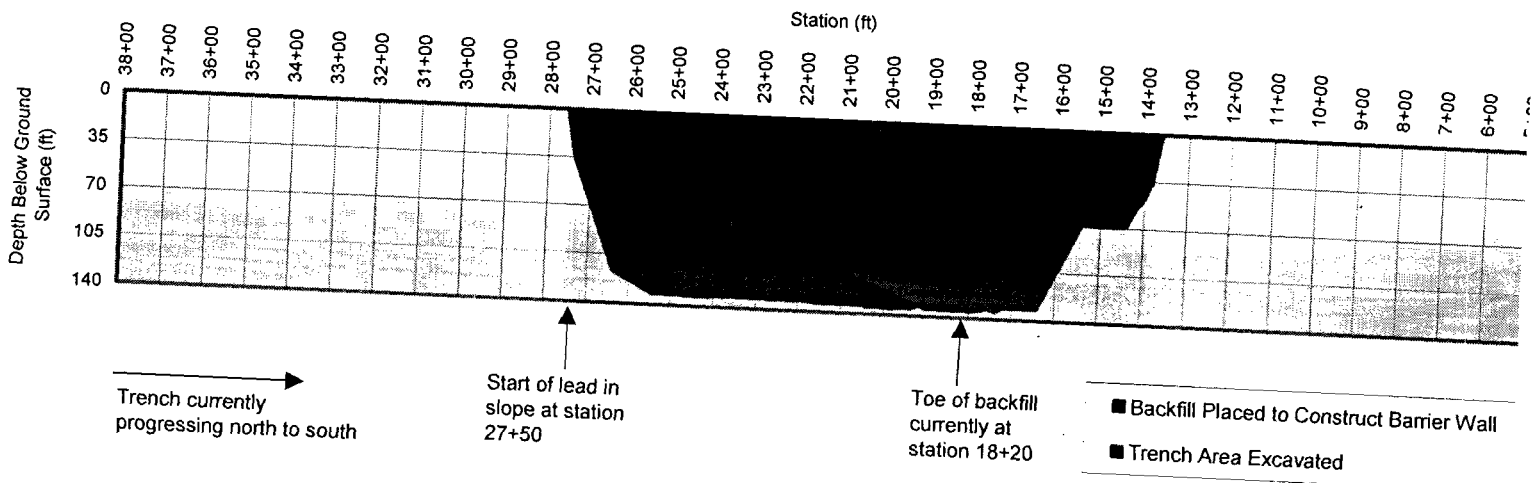
Weekly Barrier Wall Construction Progress Nov. 22nd to Nov. 28th 2003



Note: Data plotted for week through AM measurements on 11-28-03.
Some data points are interpolated between the available data points where trench depth measurements were read.

Graph 2

Barrier Wall Construction Progress by November 28, 2003



Photos from week – November 22 through November 28, 2003:



Night work, lighting across exclusion zone (November 24, 2003).



Stormwater from spoils containment was pumped to the Modutanks (November 26, 2003).